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The interest in the effects of television violence on children has resulted in thousands of studies over the last 20 years. Previous research on laughter has generated many laughter theories and several studies show that laughter may influence mirth expressions and funniness ratings of material. The purpose of this study was to determine if a television laugh track affected children's perceptions of television violence. A review of the literature covered the areas of laughter and television laugh tracks, children's processing of television, and children's television violence perceptions.

Forty-two children, aged 6 to 8 years old, were divided into two groups. One group watched a televised violent scene accompanied by a laugh track, and the other group watched the same scene without a laugh track. The children then answered questions on a Likert scale about their perceptions of the pain and violence in the scene. The data was analyzed using the *t*-statistic. At a .05 significance level, there were no significant differences between the control and

treatment groups, supporting the null hypothesis. These results supported previous research showing that laugh tracks and laughter in general do not always increase funniness or other ratings, and that children may not be identifying closely with the characters. Suggestions for future research were presented.

The Effects of "Canned Laughter" on Children's Perceptions of Television Violence

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TABLE OF CONTENTS

LIST OF TABLES

THE EFFECTS OF "CANNED LAUGHTER" ON CHILDREN'S PERCEPTIONS OF TELEVISION VIOLENCE

INTRODUCTION

When a university student suffered a brain contusion and cerebral hemorrhaging from a blow on the head, a hospital nurse told a reporter, "People watch TV and think they can hit another person without hurting them. One solid blow to the head can easily kill someone."[1]

A television can be found in virtually every household in this country—in most homes, there are two. Today, children grow up watching television, from *Mister Rogers' Neighborhood*, *Sesame Street*, *Walt Disney* and cartoons in their earlier years to National Geographic specials, *The Cosby Show*, *Top Cops*, *Night Court*, *L.A. Law*, and soap operas through their teens. At school, their teachers use videotapes to help clarify concepts in history, psychology, and foreign language classes. For fun on the weekends, groups of children will rent movies to watch at home on the television. Current viewing statistics are staggering: the average child will have watched 5,000 hours of television by the time he or she enters first grade, and 19,000 hours by the end of high school.[2] There is no escaping television. It is in virtually every home, and available to virtually every child.

Is the television phenomenon affecting its child viewers? Many, many researchers have asked themselves the same question. Does TV influence children's perceptions of the world? Does it influence their perceptions of other people? Does it send messages to children about what is right and wrong behavior? Does it teach children ways to solve problems? The general

consensus, after literally thousands of research studies, is that television is shaping the youth of today in subtle, varying degrees for each child; not in the extreme, dramatic levels that a few researchers suggest. Of course, there is no established, definitive amount of influence that can be set for all children—it is not possible to say that *x*-amount of television watching will affect every child at an *x*-amount level. The effects seem to vary in different children, at different ages, in different sexes, in different races, in different family settings, and in different parts of the world. However, it is essentially impossible to deny that television has some effects on its younger viewers. Thus, the ways and amounts that television affects children is a serious subject, and one that should continue to be studied.

The term "television effects" has been bantered around so much lately that many people have lost sight of what it really means. What types of effects can television have on its viewers? There are essentially only two: it can affect the way they think—their attitudes, feelings, and value systems—and the way they behave. Obviously, these two are related—a viewer may think that hitting someone is an appropriate way to "get even," and then behave that way by carrying out the aggression. Thus, any behavior change will probably require a thought change. These behavior effects are relatively easy to research, because the behavior acts can be observed and counted. However, determining the effects television has on just the viewers' thoughts is not so easy. Thought changes are much more subtle, and could conceivably take years of continuous viewing reinforcement to develop. They are much more difficult to isolate. For example, do children develop certain perceptions of African-Americans from their years of television viewing? Do they determine what personality styles gain the most power in the work force?

To narrow it down even more, do children simply perceive a television scene differently than they would perceive the same scene in real life? In the huge area of television research, some researchers have focused specifically on this question. For example, if a child saw a television scene where a man knocked another man off of a tall ladder during a fight, would the child perceive that act as painful as if it really happened to a man who lived next door to them? It appears that the age of the child is a primary factor in these cases. Young children (under 7 to 8 years old) have consistently been shown as "insensitive" to television violence. However, as children grow older, these violence perceptions appear to improve to more accurately reflect what really happens to TV characters. Again, it should be clear that this is an important topic for researchers, as these are thought changes that may have long-term effects on children across the nation.

Another interesting area of research is laughter. Picture this scenario: a friend trips and spills a red drink on a beautiful light-colored carpet at a dinner party. First thoughts are a mixed reaction of horror and humor—it is terrible what just happened to the carpet, but, on the other hand, it is pretty funny to see a friend fall down. The other people there, including the host, begin to roar with laughter. Will the observer laugh along? Studies show that an observer probably will. Group laughter is very infectious. What if, though, the host did not laugh? Would that send a message to the group that "this is not funny"? Again, studies on laughter show that the group would probably not laugh in this case.

Does this mean simply that one person can determine for a group what is funny and what is not funny? Do other people judge the content of a situation and help individuals decide how to interpret it through their laughter, or lack of laughter? These are interesting questions, and many researchers have attempted

to answer them. It is well-established that being surrounded by other laughing people will increase the amount that an individual will laugh. However, it is not so clear that hearing other people laughing will affect the way the situation is actually perceived. The studies in this area have divided results. People may laugh along with a crowd, but may not agree that what they are laughing at is funny. Some studies have suggested that the dissonance created by being obligated to laugh out loud when the situation was not initially perceived as funny will subsequently force a person to change his or her perception. However, other studies show that people, especially adults, are very adept at laughing along to satisfy social pressures, but can comfortably maintain their inner feelings about the situation even if it differs from their visible display of "I think this is funny."

Combine the areas of television-effects, laughter-effects, and children, and the result is a unique, little-researched area: television laugh tracks; also known as "canned laughter." Laugh tracks are present on most children's shows, and a large number of teen and adult shows, primarily prime-time sitcoms. Thus, while watching television, a child is not only viewing the behavior in the scene as it unfolds on the screen, but is also often receiving a message from an invisible audience. This invisible audience is present on the sound track in the form of a laugh track, or canned laughter. Sometimes, as on *The Muppet Show*, there is supposedly a real audience, but more often the audience reactions are heard as some sort of amorphous Greek chorus, not seen but none-the-less there to be heard. This sound track audience reacts with laughter, exclamations of surprise, groans, and applause. Its reactions are heard as the viewer observes the action. The viewer then gets two simultaneous messages: what is actually happening in the scene, and how other people are reacting to the scene.

In these cases, does the child establish, from this sound-track audience reaction, a message about the appropriate way to interpret the scene? As mentioned above, many researchers feel that children use the action they see on television as a model for behavior, and argue that the increase in adolescent violence is due, in part, to this modeling.[3] What is in the message presented on television that can supposedly render a child viewer insensitive to the pain of others? Could it be part of the audio or visual images presented? Specifically, could an accompanying laugh track affect the way a violent television scene is perceived?

As of 1992, very little is known about the effects of canned laughter on children's perceptions of violence and pain in these television scenes. It is an area that is essentially completely unresearched. Previous television-violence research has focused primarily on behavioral changes that occur after watching violence on television. Comparatively, the research on laughter has generated numerous theories of laughter, and some scholars even argue that laughter is a powerful tool that can be used to change a person's feelings,[4] but little is known about the actual effects of laughter on television viewers. Do young viewers take cues about how to perceive a scene from the laughter of others? This will be the focus of this study.

Unfortunately, studying the effects of a laugh track on children's perceptions of television is no simple task. The subject encompasses many different factors, such as those discussed above—all of which must be considered. It is important to consider the existing theories and research on laughter, and its individual, group, and age effects. In addition, it is necessary to analyze television violence content and differences in adults' and children's perceptions of violence. In other words, does an adult perceive a violent scene in the same way a child does? Since most previous laughter and violence

perception studies involved adults, these are important questions. Finally, perhaps young children, at varying developmental stages, process the information coming out of the television set in different ways. For example, do seven- and eight-year-olds pay more attention to either visual or audio content? Do they have problems understanding plots and motives? Can they distinguish between television and reality? All of these are important considerations, and will be addressed in this study.

LITERATURE REVIEW

Does canned laughter have an effect on children's perceptions of television violence? In the previous pages, some broad areas of research for this subject were introduced. All of these areas should be examined to develop an accurate picture of this seemingly narrow topic. For example, an obvious starting place is to look at existing laugh track studies. Unfortunately, there are very few of these, but the results are interesting. A second, broader topic to examine is the research on laughter in general—its group, individual, and age-related effects, and how these may relate to young television viewers.

A third important research area is television violence content and how TV violence is perceived by children. How much television violence is really present on children's programs, and are there any research studies that show how this violence is perceived by the children? Finally, how do children process and understand the television shows they watch? For example, in younger children, six to eight years old, is there evidence that they can distinguish between reality and fantasy? Has research found differences in how much attention children pay to the visual vs. the audio portions of television? Obviously, it is important to know whether children even listen to the sound track, and if so, to what degree?

So, to organize and understand this multiple-area subject, it will be broken down into four distinct research areas: television laugh tracks, other laughter factors, television violence content and perceptions, and children's processing and understanding of television.

Television Laugh Tracks

Research on laugh tracks is very limited, and up to 1992, no studies specifically address either their effect on children or their effect on perceptions of pain or violence. However, the available literature does present interesting findings that support the claim that canned laughter often affects viewers' and listeners' perceptions of media content, and almost always increases the amount of mirth they express, or how much they laugh along with the laugh track.

History of Laugh Tracks. A short history of canned laughter will provide interesting background information. According to Rosenbaum, the idea of a laugh machine was developed in the mid-1950s by CBS sound-man Charlie Douglass (135). Douglass became the first one-man studio audience for hire, with Desilu studios as one of his first clients. The original theory was that producers could, as Douglass put it, "sweeten" parts of shows that were filmed in front of a studio audience, in case the audience didn't laugh quite long or hard enough. Soon, though, canned laughter made a "daring conceptual breakthrough" (137) in such shows as *The Real McCoys*. Rosenbaum describes it well:

> Grandpa McCoy goes out into the pasture to milk a cow. Real pasture, real cow. Something funny happens like maybe the cow steps on Grandpa's hat. Suddenly there's a big roar of laughter from out of nowhere, well, from out of Charlie's laugh machine. Now, nobody watching *The Real McCoys* on his home screen is expected to believe that the laughter he hears is the real McCoy--that there's a real audience out there squatting in the cow pasture and yukking it up. All pretense to realism in canned laughter was abandoned. (137)

Monaco writes that the theory of comedy does not work without an audience; that comedy is a "communal experience" (133). He claims that actors

will always be required "in the flesh," but that the other half of the dramatic equation—the audience—can now be replicated electronically through a laugh track. As the next studies will show, this appears to be the case in many ways.

Laugh Track Studies. In a 1988 study, Neuendorf and Fennell found that the presence of canned laughter resulted in greater mirth behavior, but not greater funniness ratings of humorous material (44). They showed college students one of two versions of a television program—either with a laugh track or without one. The students were secretly videotaped while watching the show. After viewing the show, they answered questions about the funniness of the entire show, and the funniness of specific scenes. The researchers also coded the amount of overt laughter, which they called "mirth response", the students expressed. Neuendorf and Fennell suggested that their findings may reflect one manifestation of the development of a television generation for whom such a communal experience with the presence of the laugh-track audience is a common occurence. The subjects may seek a sense of belonging with the unseen reference group of laughers, or perhaps they believe that laughing along with the TV is expected of them.

Chapman, in a 1973 study on laugh tracks, found the same results, but with audio-taped material. The results showed that canned laughter generated more expressions of mirth, but again, did not significantly affect humor evaluations or ratings of how clever jokes were. The research involved presenting college students individually with a set of 10 tape-recorded jokes with or without a canned laughter background. The subjects then rated the jokes on several different scales. They were also tape-recorded during the testing, and their mirth behavior was analyzed. This study is interesting, though it does not deal with television scenes, and there is some question about whether the subjects felt like they were being influenced by the canned laughter. Some

subjects reported that they thought the canned laughter was added to influence them.

Donaghue, McCarrey, and Clement reported that canned laughter did not raise either the laughing response of viewers or the funniness ratings viewers gave cartoons (152). They did find, however, that if the subject was accompanied by a mirthful confederate—a live person, instead of canned laughter—both the laughing response and the funniness ratings increased. The research involved videotaping the behavior of college students as they watched cartoons with and without laugh tracks, and with and without a mirthful confederate. The students then rated the funniness of the cartoons. From the videotapes, the researchers then counted and sorted the location, length, and type of laughter that the audience demonstrated. There are a few concerns with this study. The cartoons were simply single-frame drawings with captions, and when the captions were read out loud, the canned laughter would pipe up with the same intensity and duration each time. Even the researchers themselves suggested that perhaps the subjects had an increased sensitivity to canned laughter from its excessive use on TV. In fact, 25% of the subjects who saw the laugh track version indicated that they were suspicious of an influence attempt.

On the other hand, Smythe and Fuller found that the presence of a laugh track significantly increased both mirth response and funniness ratings of an audio recording (133). They prepared two versions of a comedy routine, one with a laugh track, and one without. The subjects, college students, listened to one of the two versions, and then rated its funniness. The subjects' behavior was also tape recorded, and analyzed for the amount of laughter elicited and the duration of laughter. This study closely parallels the aim of the present research. The subjects were tested individually, so that the only influence on the funniness rating was the laugh track. In addition, these researchers professionally edited

the laugh track onto the tape, and no subjects were wary of the influence attempt. It did not address children, though, and again was specifically aimed at funniness ratings, rather than perceptions of violence or pain.

In another interesting study, Nosanchuk and Lightstone also found that canned laughter significantly increased both humor ratings of jokes and the amount of overt laughter expressed. College students were led into individual testing booths, and were told to listen to jokes over headphones and rate their funniness. During half of the jokes, the students heard laughter from what they thought were students in the other booths, but was really canned laughter. The study was very thorough, and addressed several key areas. First, the subjects were alone, and again only influenced by the presence of the canned laughter. Also, the jokes were presented in different orders, to eliminate any obvious order effect. The laughter that was added varied in length and intensity, simulating a more real environment. None of the students expressed any knowledge of an influence attempt in the debriefing interview. The increase in funniness ratings was significant—jokes that were pointedly unfunny received very low marks with no laugh track, but received very high ratings with a laugh track. The researchers actually expressed a concern over the television industry's use of canned laughter: "Sitting in our living rooms, then, we are subjected to a stimulus which is subtle yet believed to be capable of exacting 'conformity' with practically no cognitive pressure being felt on the part of the 'victim'" (154).

Fuller, in an essay, "Uses and Abuses of Canned Laughter," made some interesting conclusions about laugh tracks. Fuller wrote that the vast differences in experimental procedures makes it difficult to generalize the effects of canned laughter on humor or other ratings (395). He suggested that canned laughter, and more generally the laughter of others, may act as a cue which directs the listener or viewer to search for a humorous interpretation of whatever is

associated with the laughter. This prompts the perceiver to see the funny side of things. With canned laughter present, the attention of subjects may be "focused on missing aspects of humor stimuli and in the more extreme case subjects may interpret a stimulus as humorous, and laugh more, even if the stimulus itself is not intentionally funny" (396).

Summary of Laugh Track Research. The overall conclusion one reaches after examining the past research on the role of laugh tracks is that it clearly has an effect on an individual's overt mirth behavior, yet in some cases it does not lead to enhanced funniness ratings of the material. Adding canned laughter to material consistently increased the subjects' overt mirth expressions, both in duration and in frequency, in a wide variety of experimental conditions. Adding canned laughter also seemed to increase the funniness ratings of humorous and other material, but not as reliably as it increased mirth. However, the experimental conditions surrounding some of the studies may explain this effect.

There are still several unanswered questions. No experiments have involved children—would young people be more or less affected by the laughter of others? Only one of the experiments dealt with a television program or video footage—does the added dimension of video have any effect? This area needs more research. Finally, none of the experiments questioned whether a laugh track would affect pain and violence perceptions—how would they affect a scene that is not really that funny?

Other Laughter Factors

As can be seen, there are not too many specific television laugh track studies. However, there are quite a few researchers who have examined laughter in general. In the following pages, several laughter theories, and the results of several laughter experiments will be presented.

Theories of Laughter. Zijderveld, in an essay "The Sociology of Humor and Laughter," wrote, "The profound dimensions of humor and laughter should not be neglected"(6). Zijderveld added that laughter always requires an echo, and that this feature makes laughter a powerful tool. The infectious nature of laughter is easily understood because just as speech invites speaking, so laughter triggers laughing. Zijderveld argued that laughter is infectious because, like the spoken word, it needs a response, and, "the only adequate response to laughter is laughter"(34). Zijderveld's theory of laughter was organized and presented well, and the claims were supported with other scholars' work. While Zijderveld never specifically applied the theories to television, the question emerges; does the invisible audience of the laugh track in children's television programs trigger laughter in the viewers? The studies on laugh tracks show that it does—with adults, in any case.

Piddington's review of 44 modern theories of laughter confirmed that the focus of previous laughter research has been on why people laugh, and not on laughter's social and personal influence (11). To address this, Piddington suggested that laughter can be used as a "social sanction," with both positive and negative repercussions (115). For example, laughter can be used to socially punish a person for saying or doing something not acceptable. Piddington also claimed that when people laugh, they are often expressing an attitude of complete satisfaction with things as they are; in essence, they are acknowledging that what they are laughing at is OK (129). Piddington wrote that this is learned as infants, and polished as people grow up and mature.

In a book on laughing, Holland also presented several laughter theories—ranging from comic-ritual laughter, laughter as a relief, and laughter to express superiority (34-45). Morreall, in *Taking Laughter Seriously*, defended his own theory of laughter, arguing that laughter is a product of a feeling of security.

When an unpleasant or startling event passes, we laugh to show ourselves that we are now back in control, and everything is fine. Morreall actually went on to write that it is possible to induce pleasant feelings by simply starting to laugh (54). Morreall's theory is interesting, and, like Zijderveld's, was supported by previous scholars' research. If people's feelings can be changed by making them laugh, does this mean that we can change the way they feel about certain television scenes?

Laughter Research. Many research studies have examined the effects of humorous material in mass media, like television, radio, newspapers, and magazines,[4] but again, few have isolated the effects of laughter on children. Brown and Bryant, in an excellent review of the use of humor in the mass media, stated that the average American laughs 15 times per day; a great deal of which is elicited by messages from the mass media (143). They cited Mendelsohn's interesting theory that there are two types of humor and laughter in mass media: expressions of pleasure to others in a habitual way, and communication of pleasure to viewers in an effort to "promote a nonserious frame of mind" (145). Mendelsohn contended that the mass media cues the audience members that the material is humorous, thereby maximizing the pleasurable experience (145). Since the primary purpose of most television programming is to entertain, the viewer must be put in the right mood to appreciate it. It is this type of humor that is central to this study. Unfortunately, there is not much followup research in this area. The theory is interesting, however, and it appears that Mendelsohn believed that humor and laughter can be used to alter a viewer's frame of mind.

Brown and Bryant also summarized comedian Art Buchwald's thoughts on mass media humor. Buchwald argued that humor is easier to accomplish when presented audiovisually. He claimed that when the characters are seen and heard, the audience members will identify with the characters more strongly

(144). Again, this relates to this current research. Could this identification occur in part through a laugh track?

In an experiment similar to some laugh-track studies, Chapman, in 1975, confirmed the notion that sharing humor through group laughter enhances both mirth responses and humor ratings. In the research, 7- and 8-year-olds listened to a tape of jokes either alone, in dyads, or in triads, and then rated their funniness. The amount of smiling and laughing the children expressed was also recorded. Chapman found that in the dyads and triads, the amount of overt mirth was significantly higher, and the funniness ratings were higher than children who listened alone. It was concluded that laughing and sharing the social situation is crucial in enhancing humor ratings and overt mirth responses (47).

In a short experiment by Butcher and Whissell, college students were found to laugh longer and with greater intensity if they were in larger audiences (950). Several different-sized audiences, from 2 to 10 people, watched a short film, and their mirth behavior was recorded. As the audience size increased, the amount of mirth expressed increased. The researchers suggested that this supports theories of social conformity, where the laughter of each audience member "feeds" on one another.

On the other hand, though, Leventhal and Mace found no differences in humor ratings in children who were encouraged to laugh at a movie. First and second graders were shown a slapstick movie, and given one of two instructions: laugh as much as you want because the laughter would be used as a "laugh track" of sorts, or don't make any noise because the researcher was "doing some work" and couldn't be disturbed. After watching the movie, the children rated its funniness. Of course, the amount of overt laughter and mirth was

significantly higher in the group that was encouraged to laugh. However, there were no significant differences between the groups on funniness ratings.

A final interesting laughter study, by Young and Frye, found that one confederate could influence an entire group's overt laughter and humor ratings of jokes (753). In the experiment, groups of male college students were asked to listen to jokes played on a tape recorder, and rate their funniness. Before the testing began, a female confederate joined the group, reportedly because she couldn't attend the female group testing time. This confederate reacted either neutrally, with laughter, or with expressions of disgust and embarrassment at several jokes. The subjects in the laughter group showed a significant increase in amount of laughter and funniness ratings over the other two groups. The researchers claimed that the embarrassed response of the confederate cast a kind of pall over the group.

The researchers concluded that the environmental factors of the setting may play an extremely important role in determining the individual's appreciation of humor. This experiment is 25 years old, and the current television generation may react differently to a laughing stimulus. It is interesting, though, how one person's overt expression of laughter affected an entire group of strangers. There were some obvious gender and social interaction factors influencing this experiment that cannot be ignored. However, is it possible that a laugh track works in the same way—that this audience that the children may respect in a sense is flavoring the television program from the very beginning? Do we take cues about how serious or funny something is from other people in our environment? These studies would support the belief that we do.

Summary of Laughter Research. Again, it appears from these studies and theories that laughter clearly has an effect on overt mirth behavior, and may be

also influencing people in other ways. With this group of studies, a few conclusions can be drawn. First, as the audience, or group, increases in size, the amount of laughter increases. In addition, there is often an increase in funniness ratings. It is also apparent that individuals can be influenced by as few as just one other laughing person, especially if that person is respected. This parallels the laugh track findings—that people will echo the laughter of others. Some questions still remain, though. The effects of laughter on children have been addressed, but not with much thoroughness—what exactly is the effect of laughter on children? Can we draw the conclusion that laugh tracks act in the same manner as live group laughter?

Television Violence: Defined, Content, and Children's Perceptions

With all of the controversy about television violence, and how it is affecting our children, some basic, obvious questions come up. How much violence is really present on television? For that matter, what is the definition of "violence"? Adults seem concerned about these horrible acts of aggression, but how do children perceive them? Do they see violent acts "in the same light" as adults?

Definitions and Amount of Television Violence. How much violence is actually present in children's television programs? Gross, Gerbner, and their colleagues have been conducting a thorough content analysis, since the late 1960s, of many facets of children's programs. By 1979, they had analyzed over 1,400 programs, 4,100 major characters, and 10,400 minor characters (Gross 19). Among the program aspects analyzed was television's portrayal of violence. Gross defined violence as "the overt expression of physical force, with or without a weapon, against self or others." While idle threats and verbal abuse were not coded as violence, accidental and natural violence were. In one report, Gross

noted that the percentage of programs containing violence had increased steadily over a nine-year period, to a high of 75.5 percent in 1977 (Gross 20). In the late 1970s, the rate of violent events per hour ranged from 6.7 to 9.5. The weekend morning programs, which Gross refers to as the "kidvid ghetto," contained the highest rate of violent actions—9 out of 10 programs contained scenes of violence at a rate of 17 per hour (Gerbner and Gross 13).

In a different content analysis of television violence, also performed in the 1970s, Halloran and Croll reported that approximately 80 percent of fictional American television programs contained acts of violence. In roughly half of those programs, a major character was involved in the violence as either the aggressor or the victim. They claimed that the rate of violence in television shows averages just over 7 incidents per hour. Interestingly, Halloran and Croll found that the most violent type of television program was the children's cartoon. All the cartoons they coded contained some violence, and the rate of violent acts was nearly 34 per hour, or 17 per half-hour show (Gunter and McAleer 77).

Similarly, a 1980 study by Greenberg focused on television drama series. Violence, defined as "physical aggression," occurred more than 9 times per hour between 8 and 9 p.m., and more than 12 times per hour between 9 and 11 p.m., and more than 21 times per hour on Saturday morning children's programs (Gerbner 17).

On the other hand, another study, performed in Great Britain, showed that with the exception of cartoons, violence was actually rare in children's programs. However, the researchers found that in terms of a strict mechanical count of acts per hour, American cartoons were notably violent. Compared to British cartoons, the American cartoons were twice as likely to be violent as

British cartoons. They claimed that cartoons "number amongst the most violent programmes on television" (Gunter and McAleer 79).

Comstock, in a 1982 literature review, presented an excellent discussion of television violence content. The above studies were confirmed, and predictions for the future were made. Comstock suggested that with the increased awareness and concern over television violence, the networks will begin to reduce the amount of violence (Pearle et al. 116-21). As it turned out, though, the violence figures in the 1980s remained relatively stable, with only slight fluctuations over the years (Gerbner 17). The overall average rate of violent incidents since the late 1960s is 21 per hour for children's shows, which is roughly what it was in the 1988 Gerbner study (17).

From these content analyses of television violence, it is clear that violent acts are prevalent in many television shows—and, through 1992, are particularly common in children's programs. Previous research suggests anywhere from 17 to 34 violent acts per hour on children's television shows. The question that now emerges is do the children see these acts as violent? If children were to perform a content analysis, would they perceive the same acts as violent that adults would?

Perceptions of Television Violence. Gunter and McAleer presented a review of some studies on adults' and children's perceptions of television violence. One BBC study, for example, showed that both children's and adults' perceptions of violence did not depend on strictly how many violent acts it contained (79). Rather, the realism of the program was the key factor to perceived violence. Real-life violent acts reported in the news or in documentaries were rated as more violent than violence in fictional settings. In a later study, these findings were supported. The familiarity of the surroundings emerged as one of the most powerful factors influencing viewers' perceptions of violence. The closer to everyday life the violence was portrayed, in terms of time and place, the more

serious it was judged to be. Other studies (Gerbner 22) supported this; particularly that realistic settings and strong character identification affected both children's and adults' perceptions of violence.

Gunter and McAleer cited a study, performed in Holland, that found that overall, children's perceptions of television violence did not differ from those of adults. However, the children's ratings differed significantly from the content analysts', who rated the amount of violence by a systematic observation of the program. Programs that were extremely violent according to objective content analysis were seen by children as "hardly containing any violence at all" (80). The research involved showing children, aged 9 to 12 years old, several different types of violent television programs, from realistic crime dramas to fantasy cartoons. After viewing each show, the children filled out a questionnaire. The realistic crime shows were more absorbing for children, and more emotionally responsive for the children than the fantasy cartoons. They were also rated by the children as containing the most violence, again showing that the more realistic the violent acts were, the more violent the children rated them. The content analysts, on the other hand, rated the fantasy and realistic violence at the same levels.

Haynes argued that it is questionable whether children's perceptions of television violence are congruent with adults' perceptions. Since most adults did not consider comic cartoon violence as real violence, Haynes was interested to see how children perceive the violence present in comic and authentic cartoons. Haynes performed a study similar to the Holland study cited above, but came up with dramatically different results.

Haynes showed half of the children, aged 10 to 11, a "comic" cartoon, and the other half an "authentic" cartoon. The "comic" cartoon portrayed a violent act in a comical manner, where the victim of violence had no lasting or true ill

effects. The "authentic" cartoon depicted a violent act as being true to life, with no comic effect intended. After watching the cartoons, the children answered questions about their perceptions of the violent content. Haynes found that the comic cartoon was perceived as much more violent and less acceptable than the authentic cartoon. It was suggested that authentic cartoons usually contained threats to life or some real physical injury. However, the violence was usually incidental to the major theme of the story, and the child may have become involved with the plot and lost some awareness of the violence. This was in direct contrast to the nature of the comic cartoon where violence was the main plot, and was used to evoke laughter. Haynes concluded that the study indicated that violent content in comic cartoons is, at the very least, recognized as violent by children. The findings also point to the possibility that comic violence is seen as more violent than realistic violence, and possibly more feared by children (69).

Interestingly, other studies have shown that children will tend to rate programs as more violent than adults will (Abel and Benison; Greenberg and Gordon). The Abel and Benison study, for example, looked at the differences between mother and child perceptions of non-cartoon violence. They found that children perceived significantly more violence in the television programming than did their mothers.

Summary of Television Violence Research. As can be seen, there is no firm answer as to how violence is perceived by children. It is clear that children are aware of the violence present in TV shows, but it is not clear whether they are more affected by the "fantasy," or "comic," violence or the "realistic" violence. There are more studies indicating that the realistic violence will be rated as more violent, but more research in this field will be necessary. Similarly, there are slightly more studies supporting the idea that children and adults will rate

television violence at roughly the same levels; but again, more research is needed.

However, it should be apparent that television violence does occur regularly in children's programs, and that children are aware of some types of violence. Studying how other factors, like a laugh track, affect this perception of violence is important. For example, if the realistic violence is not accompanied by a laugh track, but the comic violence is, will children perceive the comic violence differently? The studies cited above did not mention whether canned laughter was present on any of the violent shows, but this may have had an effect.

Children's Comprehension of Television

Many years ago, a young child came up to Fred Rogers and asked, "How did you get out of the TV?" And, soon after, a mother wrote to Rogers, explaining that her daughter throws kisses to him on television and can't understand why he never throws kisses back. Since then, Rogers has worked hard to make it clear that television pictures are only pictures. He writes, "Children need to understand the difference between real and pretend—particularly on television, where there is so much pretend that can be very scary" (44).

Can children discriminate between real and fantasy? Over the last 35 years, children's television has received much attention and criticism. Thousands of experimental studies, hundreds of books, and countless newspaper articles have attempted to identify the various effects of television content on its young viewers. However, most television-effects studies leave some underlying questions unanswered. How well do children actually understand the television they watch? Can children correctly interpret televised events as real or pretend?

Do they perceive violent acts on television as well as adults perceive them? At what age do children begin to make these distinctions? Is there a difference in their understanding of the audio and visual aspects of television?

These questions are important in this research, because, as can be seen in the previous sections, what children consider as reality and fantasy may directly influence how they perceive the actions in the scene. In addition, there may be age or developmental factors that affect how much of a scene a child can understand. There might also be processing differences between audio and visual content—obviously important for a study on laugh tracks.

In the following pages, the available research on this subject will be presented in two sections: children's discrimination between reality and fantasy, and children's comprehension of audio and video content.

Children's Discrimination Between Reality and Fantasy. Are the events and characters depicted in television programs believed to be real? The reality-fantasy distinction is an important issue because research has shown that the effects of television on children's subsequent attitudes and behavior can be significantly modified by their perceptions of how real the televised events are. Gunter and McAleer wrote that in general, the more realistic events have more profound effects on behavior. However, they pointed out, most children's viewing is devoted to fictional programs—cartoons and comedies—not news (41). Even among the fictional programs, though, there can be considerable variation in how "real" different portrayed situations and characters appear to be.

The extent to which children are deceived by television depends to some degree on how specific or broad the research question is written. For example, even quite young children are able to make crude distinctions between programs featuring animated and human characters, and understand that many of the heros they see on television are not real people. This distinction obviously

improves with age. One researcher found that among 5-year-olds, over half of those interviewed did not understand that television characters are played by actors. At age 8, over two-thirds knew this, and by age 11, nearly all children understood this fact (Gunter and McAleer 42).

According to Gunter and McAleer, up to the age of 7 or 8, the distinction between reality and fantasy was often cloudy. By middle-childhood, judgments about television's realism became much more refined. News was perceived differently than drama; commercials were distinguished from programs, and so on (42). Another study, performed by Dorr, also addresses the reality-fantasy distinction. Dorr found that 4-year-olds found it difficult to explain the differences between animated and puppet characters. At this early age, children were also uncertain about the mechanisms of television, and this in turn affected their perception of what was real on television. Dorr wrote that an example of this confusion was their failure to understand how characters "get inside TV." It was found that older children, aged 7-8 years, still were often confused about how certain characters are made. They could, however, usually discriminate between human and animated characters (Gunter and McAleer 43).

Flavell and associates also addressed the issue of age and reality discrimination in a series of three 1990 experiments at Stanford University. The researchers investigated whether 3- and 4-year olds interpret television images as mere representations of objects or as real, physically-present objects. The children were administered a series of tasks, each with three sub-tasks, called "real," "photo," and "video." For example, in a real sub-task, the experimenter squeezed a rubber frog noisemaker, and said, "I'm squeaking a frog. Do I hear this frog right now or not?" In a photo sub-task, the experimenter placed an 8x10 inch front-view photograph of a seated man on the table. The experimenter said, "Here's Jim." She then banged a drum and continued to bang it during

questioning, "I'm banging a drum. Does Jim hear this drum right now or not?" Finally, in a video sub-task, the experimenter played a video of a seated woman, and said, "Here's Ruth." The experimenter rang a bell, and continued to ring it during questioning, "I'm ringing a bell. Does Ruth hear this bell right now or not?" The researchers found that the majority of 3-year-olds interpreted the television images as real, physically-present objects, whereas the 4-year-olds consistently interpreted the images as pictorial representations of objects. The researchers suggested that the reason the younger children made these perception errors is a lack of conceptual development skills—skills which usually begin to develop at about age 4 (399-416).

Another study, by Nikken and Peeters, analyzed how children from ages 4 to 9 perceive television reality. The children were shown segments from *Sesame Street*, and asked questions about reality perception: Where does Lex live when the television is off? Can Pino—a puppet—talk by himself? Is Pino in the television right now? If you hold a drawing in front of the television, can Pino see the drawing? Nikken and Peeters found significant improvements in reality-perception with age, but they claimed that this levels off when children reach about 7 years of age. They also found, interestingly, that understanding the use of a VCR proved to be insignificant to the perception of television reality. They concluded that basic reality perception is usually established by the age of 7, and that from 7 years old on, the children's continually-developing communication skills will allow for more subtle distinctions in reality perception (441-52).

Other factors have also been shown to affect reality perceptions of television. Downs researched how the type of event (aggressive or non-aggressive), type of character (human or non-human), and format of the event (cartoon or non-cartoon) influenced children's judgments of real and pretended television events. The children, aged 4 to 6, viewed segments from various

videotaped shows, and were then asked questions about whether various events were real or pretended. Downs found that the format of the events seemed to influence the real-pretended judgments. Cartoon events were viewed more often as fiction, whereas non-cartoon events were more often viewed as real. Neither type of character nor type of event appeared to influence perceptions. Downs wrote that the findings clarified previous research and suggested that children as young as 4 and as old as 6 years recognize that cartoon programming is "make-believe" but continue to assume that non-cartoon programming is at least roughly analogous to social reality (779-82).

As children grow older, they become more sophisticated about television programs. This development occurs at more than one level (Gunter and McAleer 43; Hawkins 299-305; Quarfoth 217). Deciding about the realism of television may involve comparing television portrayals with real life. Another feature of this area of judgment, however, involves knowing how and why television programs are put together. As discussed earlier, most research indicates that the basic knowledge that television programs are made-up develops during elementary school years, and that children older than 8 years old seldom think of television as offering a "magic window" on the world. How completely they understand the reality aspects of television is still debatable.

In one study, children were given pairs of programs and were asked to say which of the pair was more real and why. The children aged 10 to 12 years old were much more articulate than were those aged 6 to 8 years, and gave more criteria for their judgments. The younger children readily recognized the reality status of programs which contained blatant violations of reality, but remained confused about the status of other programs, such as fantasy drama, news, sports, talk shows, and comedy shows (Gunter and McAleer 44). A similar study showed that younger children tend to focus on physical features of a program for

cues to its lack of reality, like the presence or absence of stunts, costumes, and props. Distinctions were also based on whether a presentation is acted, scripted, rehearsed, live, or filmed (Gunter and McAleer 44).

Two final age-related studies support the previous studies' findings. Lyle and Hoffman interviewed 1st, 6th, and 10th graders to find out how realistically television portrayed real life. About half of the 1st graders felt that people on television were very much like people they knew. The 6th and 10th graders were more skeptical, but large percentages still believed that television characters and real people were alike most of the time. In addition, Lyle and Hoffman found that Caucasian children were less likely to consider television as real than Mexican and black children (Liebert and Sprafkin 89). A second study, involving interviewing children about how they understand TV, found that children do not distinguish TV from reality clearly until as late as 6th grade (Bryant and Anderson 203).

Gross, in an essay on television violence, argued that television drama conforms to the traditional narrative conventions of representational realism. However contrived their plots might be, television stories appear to take place against a backdrop of the real world. Gross wrote, "It offers to the unsuspecting viewer a continuous stream of 'facts' and impressions about the ways of the world, about constancies and vagaries of human nature, and about the consequences of actions" (21). The researcher added that normal adult viewers are aware of the fictiousness and vicarious nature of television, but children may not have this ability.

Children's Comprehension of Audio and Video Content. Researchers have found that young children's attention to television varies with a variety of content and presentation formats. Before the effects of television content on children can be measured, it is important to understand how children physically

and mentally process the information coming out of the television set. Understanding television dictates and even determines attention to the screen. The nature of children's attention to programs changes with age as their understanding of the programs develops, as we saw in the previous section. According to Gunter and McAleer, young viewers' attention to television can change significantly by simple physical happenings in programs (35). As children learn about different types of programs and develop the ability to recognize the particular characters, they become more selective in the way they respond to visual and sound effects.

There are two primary kinds of format attributes that have been investigated: visual attributes and sound, or aural, attributes. The major difference between these is in the way they are able to affect and control children's attention. Clearly, visual attributes can have influence only when the child looks at the screen. Sound attributes, though, can draw the child's attention to the screen even when he/she is not looking directly at it. Both of these features of television can carry connotative or contextual meanings about the message they accompany. For example, a laugh track can signal humor, and a human speaker without any other sound effects can suggest serious content (Bryant and Anderson 48).

In one study, Alwitt and associates observed children aged 3 to 5 years old continuously while they watched a mixed compilation of programming over a 3-hour period. Snacks and toys were available during viewing. The children were assessed according to how much their attention was influenced by visual and sound attributes. Which features of the program made the children look back towards the screen when their attention was diverted elsewhere? Which features could maintain the child's attention while he/she was actually watching the screen?

The researchers found that the audio effects proved to be the main means of regaining a child's attention, while visual attributes were best at maintaining the child's attention. In other words, some kind of change in the spoken dialogue, background sounds, or music could encourage a child to look at the screen, but this look would be prolonged only if what was happening visually proved to be of interest (52-67).

The researchers then examined both the audio and visual attributes to assess their potential for either eliciting or inhibiting attention. Several types of sound-track changes produced visual attention from inattentive children: changes in volume, women's voices, laughter, special sound effects, etc. Three sound features actually inhibited attention: men's voices, individual singing, and slow music. Six visual attributes were found to maintain attention, like quick scene changes and close-up shots, and six visual attributes terminated attention (64).

Another study, performed by Hayes and Birnbaum, found that children process the visual information better than the aural information presented in television cartoons. They defended that preschool, or "preoperational," children focus their attention on the visual features of televised presentations and attend less closely to other characteristics (410). "Aural information" was defined as the accompanying sound track of the cartoon, including both the laugh track and the dialogue. Two types of cartoons were created: a composite cartoon in which the sound track was inappropriate for the events portrayed visually, and a normal cartoon in which certain events were presented only visually, only aurally, or both visually and aurally. After viewing a cartoon, the subjects were asked recognition questions, some of which were specific to the information covered in only one modality. Hayes and Birnbaum found that the retention of events portrayed visually was consistently higher than the retention of events portrayed

aurally. One group of children was shown a cartoon with the wrong sound track, and only one child recognized the "mistake." Although this study was fascinating, there were some flaws. These scholars defended an interesting theory that young children do not listen to dialogue too accurately, or at least cannot recall specific details of what was said. Their conclusions, though, emphasized that children do not listen to much of anything, but rely solely on visual information, which seems debatable.

Pezdek and Hartman performed a similar study of the relationship between children's attention and comprehension of auditory and visual information, and came up with slightly different findings. They divided sixty 5-year-olds into three groups, and they all watched a videotape of *Sesame Street*. One group viewed the television with toys available to play with, another group viewed the television with a record playing in the room, and the final group had no toys or record (the control group). All of the children viewed the same television sequence, which consisted of visual segments, auditory segments, and mixed-modality segments. Pezdek and Hartman found that the children effectively distributed their attention so that they could process auditory and visual information from television while performing other activities. In addition, the children were sensitive to which segments required visual attention and which did not, and they were able to spontaneously adjust their pattern of visual attention appropriately. The researchers claimed that these results indicate that children utilize a fairly sophisticated cognitive processing strategy while watching television (1015-23).

Many researchers, like the ones above, believed that young children can understand information presented visually better than information presented verbally. There is much evidence that memory for discrete, visually depicted objects and actions is superior to memory for verbal content among children at

all age levels. However, Hoffner, Cantor, and Thorson argued that the literature also suggested that when the visual depictions and sequences of events must be analyzed and interpreted, younger children will have more difficulty understanding predominantly visual sequences than in understanding a verbal description of the same content. They performed a study to illustrate this. Children at three age levels, 5 to 6, 8 to 9, and 10 to 12 years old, were exposed to a story in one of three videotaped formats—audiovisual, video-only, or audio-only. They then assessed how well the children comprehended and remembered the events of the story. The 5- to 6-year-olds in the video-only condition performed more poorly on the questions than did subjects in all other groups. The researchers claimed that young children had a more difficult time understanding and integrating information presented visually than when it was presented verbally, whereas older children comprehended information in both formats equally well (227-45).

Krull and Husson claimed that a combination of both audio and visual modes was more effective than either mode alone, especially for children under 8 years of age (45). Bryant and Anderson presented the findings of several studies to support this (50). They claimed that information presented simultaneously in both visual and verbal modes was understood better than the same content presented in either form alone. This suggests an interaction between modes of representation and/or sensory modalities.

Some other related research in child development showed that young children only retain fragmented parts of television shows, and they infer few relationships among scenes (Wartella 21-52; Husson 344-45). For example, Collins found that 2nd-graders are less likely than older children to remember program content and plots (31). The experiment involved testing children in several age groups over the content and story development of a television show

they watched. The tests required written answers. Collins' conclusions indicated that young children only remembered specific scenes, and not the plot that led up to the action:

> Clearly, young grade-school children are less likely than older children to remember program content that adults consider essential to understanding a plot—that is why we call their understanding "limited" (28).

Summary of Children's Comprehension of Television. It is important to consider these findings, because it raises the question of how children explain what happens in violent scenes. Children who do not understand or remember the motives, or plot, behind a murder scene, for example, may be using different information to process and understand what they are seeing. It is very probable that children cannot understand the vocabulary used in most shows, causing some of this difficulty in understanding the plot. However, is the laugh track understandable to children? Is it possible that when faced with a violent scene on television, children use what they see and what they can understand of the sound track, including the canned laughter, to process what is happening?

A commonly held belief about television viewing is that it requires little effort. Indeed it is true that for most viewers for most of the time, television is watched as a source of relaxation. Yet in order to get any enjoyment or satisfaction out of television at all, there has to be a degree of understanding. The ability of viewers to follow a program and to understand at least part of what's going on is essential to being able to get anything out of television at all. This is just as relevant to children as it is to adults.

Much of the research on the impact of television on children depends on how the television content is perceived. As can be seen, there are still some unanswered questions. The debate over video and audio comprehension is one

example. Some people, like Fred Rogers, believe that the television perception issue is not being addressed well enough by parents and broadcasters. In fact, one of the current goals of *Mister Rogers' Neighborhood* is to help children understand more about television: "We never pretend that the living room they see is really where I live. I call it my 'television place,' where I come each day for our 'television visits'" (44). Gross agrees, claiming that the symbolic world of television is a mixture of truth and falsehood, of accuracy and distortion. Gross writes, "This is an inevitable concommitant of naturalistic story-telling; should it be a cause for concern?" (21)

Summary of Literature Review

What conclusions can be drawn from the research in these four areas? Some questions remain unanswered, and some seem to have clear results. These areas are not integrated in most cases, so the conclusions may seem very unrelated. However, to study the effects of a laugh track on children's perceptions of television violence, all of these general finding are important to consider. The following is a summary of the basic findings from the research:

- Both laugh tracks on video and audio-taped material, and group laughter in general, clearly increase the amount of overt mirth expressions in viewers or listeners—both in duration and in a wide variety of experimental conditions. This indicates that people will echo the laughter of others, even if the other people are in the form of a laugh track.
- Laugh tracks and general group laughter also seem to increase the funniness ratings of material, but not as reliably as they increase mirth. A few studies found that funniness rating did not increase with the presence of laughter. This question still needs further research.

- Neither the laugh track nor general laughter studies specifically addressed children, so the effects of laughter on children remains unanswered.
- Violent acts are present in many children's programs, with approximations ranging from 17 to 34 violent acts per hour of television.
- These violent acts on television are generally rated as equally violent by both children and adults; however, some studies suggest that children will rate the acts as more violent than adults will rate them. In addition, children will rate "realistic" violence as more violent than "fantasy" or "comic" violence.
- Children 8 years old and younger use a combination of audio and visual modes when processing television scenes, but probably cannot understand enough of the vocabulary to follow the plot.
- Generally, children up to the age of 7 or 8 have difficulties understanding that television is not real, even if the shows are animated cartoons. This understanding improves steadily with age.

PURPOSE STATEMENT

While some scholars have studied children's perceptions of violence in cartoons and other shows, and different scholars have studied various theories of laughter and laugh tracks, and still others have studied how children process television, the three are very rarely integrated. There is little information on how listening to canned laughter affects perceptions of violence and pain.

Scenes on television may be perceived as being less violent if they are accompanied by an approving laugh from the "invisible" audience. Is there a correlation between how violent or painful a scene is perceived and whether a laugh track is present? This study investigated this question, concerning the effects of canned laughter on the way children perceive violence and pain in television scenes.

In summary, the literature suggested that: (1) laughter has a powerful potential to affect feelings and mirth expressions, but not much is known about these effects, and (2) "violent acts" permeate most children's television shows, with up to 34 violent acts per hour, and (3) young children very likely use a combination of audio and visual modes when processing television scenes, but also very likely cannot understand enough of the information presented to follow the plot, and (4) a reasonable question exists as to whether canned laughter on a sound track affects a child's perception on violence and pain in television programs.

The experiment focused on first- and second-grade children (approximate ages, 6 to 8 years old), who watched a violent television scene. The research analyzed how the presence of a laugh track affects the children's perceptions of a televised "violent" scene. Because the previous research has left many questions unanswered, the following hypothesis was proposed:

Ho: There will be no significant difference in the humor, violence, and pain perceptions between children who see a scene with a laugh track, and children who see the same scene without one.

If there were influences from the laugh track, as some research suggested, then the following additional hypotheses were proposed:

H1: Children will perceive a televised scene as more humorous and laughable if it is accompanied by a laugh track than if it is not accompanied by one.

H2: Children will perceive a televised scene as less violent and painful for the character if it is accompanied by a laugh track than if it is not accompanied by one.

H3: Children will perceive the characters in a televised scene as being less angry at each other if it is accompanied by a laugh track than if it is not accompanied by one.

METHOD

Participants

The participants for this study were selected at random from several Boys and Girls Club after-school sites in the Corvallis 509J elementary school district. Before contacting the school district, approval was obtained for the research from the Oregon State University Committee for the Protection of Human Subjects, a division of the O.S.U. Research Office (see Appendix A). There were approximately 200 children in the 6- to 8-year-old range, and an Informed Consent form was mailed to each family (see Appendix B). Signed consent forms for 42 children were received. The children ranged in age from 6 to 8, with an average age of 7 years, 5 months. The children were randomly divided into two equally-sized groups, with each group having a similar cross-section of ages and sex.

Independent Variable

Two pre-taped scenes were prepared, with each scene containing identical visual content, order, and length. The scene was a one-minute portion of the musical-western *Paint Your Wagon* (for scene script, see Appendix C). The scene portrayed action that would produce great pain in real life: two men have a verbal argument, and then engage in a fist fight, with one character knocking the other unconscious. On one of the tapes, a laugh track was added using professional videotape editing equipment, indicating that the invisible audience thinks the action is funny. The other tape contained the natural sounds of the scene itself.

To assure that the laugh track seemed natural, a variety of chuckles, longer laughs, and "explosive" laughter was used. In addition, the laugh track scene was shown to several adults, who were then asked if anything seemed odd or unusual about the scene. The adults all claimed they had no idea that the laugh track was added; that it seemed to have been a part of the original video.

One group of children watched the scene accompanied by the laugh track, and the other group watched the scene without the laugh track. They were then interviewed to see how they perceived certain aspects of the scene. The children watched the scene alone, and were interviewed alone, so there were no group influences.

Dependent Variable

The dependent measure that was used in this study was based on a scale devised by Greenberg and Gordon, who also studied children's perceptions of television violence. The instrument contains seven questions about the scene (see Appendix D for script and questionnaire). The order of the questions was carefully considered so the children would not try to guess what specific answers were desired in the first questions. After viewing either the scene with the laugh track or the scene without it, each child was interviewed individually. In front of each child were two bowls—one was empty, and the other contained 10 marbles, simulating a Likert scale. To answer each question, the child was asked to place the number of marbles which best described how he or she felt about the scene into the empty bowl. For example, how hard did the men hit each other? The number of marbles was then recorded by the interviewer.

The responses were then analyzed to look for differences in pain, violence, and humor ratings between the laugh-track and the no-laugh-track versions of the tape.

Reliability and Validity

To ensure reliability, or the consistency of data results across time and subject populations, several measures were taken. The interviewers were trained carefully before the experiments, and practiced the interview. They were coached on avoiding eye contact or using other facial or vocal expressions that may indicate what type of answer the child should give. The interviewers were also given a script for the entire interview process, which they were required to follow exactly. The interview questions in this script were based on a scale used by Greenberg and Gordon, who studied children's perceptions of television violence. The Greenberg and Gordon interview scale had a high level of reliability in their studies. In addition, at each location the equipment and interview stations were set up similarly, and the process carried out in the same manner. Finally, a pilot study was performed to identify and resolve any potential reliability problems.

Similarly, to ensure validity, or the accuracy of the data collected, several measures were taken. First, the interview questions on the script were carefully placed in an order that would help prevent the children from guessing what information was desired. The questions were also worded in language a 6- to 8-year-old could easily understand, so there would not be any vocabulary problems. The amount of marbles that each question asked for was specifically designed to match the amount of "feeling"—for example, a question would ask, "If you thought it was *really* funny, put a lot of marbles in the bowl..." instead of, "If you thought it was *really* funny, don't put very many marbles in the bowl..." This will avoid any problems of children not clearly understanding how to answer. In addition, the laugh track was carefully edited onto the videotape,

using a variety of chuckles, longer laughs, and explosive laughter, to avoid any children guessing that the laugh track was fake. (As previously mentioned, the tape was also shown to several adults to verify that the laugh track appeared "normal.") Finally, as with reliability, the pilot study performed helped identify possible validity problems.

Pilot Study

A pilot study was performed using eight children. After the pilot study, a few minor changes were made in the data collection process. For example, some of the children were responding to questions primarily with all 10s or 0s, and very few numbers in between. The original interview script was changed, adding the paragraph instructing the children to "only put as many marbles as you feel you should" (see Appendix D). In addition, because of the tendency for the children in the pilot study to answer loudly, and make comments while answering (example, "Wouldn't it hurt *you*?"), the interviewers were placed as far apart as possible—in other rooms in some cases—to be sure the children were not influencing each other.

ANALYSIS OF DATA

After the pilot study, 34 children participated in the actual research. The results of the study are presented in Tables 1 and 2. The scores for each question could range from 0 (no marbles) to 10 (all of the marbles)—simulating a Likert scale—and each question represented a specific perception (funniness, pain, friendliness, etc.) of the video scene. In Table 1, the mean, median, standard deviation, and *t*-statistic are summarized for each question.

To determine if there was a significant difference between the laugh-track group and the no-laugh-track group in the responses on each question, the Student's *t*-statistic was chosen. Since the sample size was relatively small (N=34), and the subject populations were of different sizes (16 and 18) and different populations (not paired), the *t*-test was the most appropriate choice. A one-tailed test was applied in each question, because the assumption was that if the laugh track influenced the answers, it would be in a specific direction—either up or down—depending on the question.

For research of this type, it is common to examine the results for a 1% or 5% significance level (i.e. .01 or .05). If there is a significant difference at these levels between the control and treatment groups' scores, then it is usually safe to assume that the treatment did have the desired effect on the group. So, as a starting point, the data was analyzed at a 5%, or .05, significance level.

Using a one-tailed test at the .05 significance level and with 32 degrees of freedom (N-2), the null hypothesis could be rejected for all of the questions if *t* was greater than 1.70. As can be seen from Table 1, none of the *t*-statistics for the questions was greater than 1.70. Therefore, at either a 1% or 5% significance level, the conclusion is that there was no significant difference between the two groups on any of the questions—i.e., the null hypothesis cannot be rejected.

Table 1

Summary of Data

Raw Scores

1-L	1-NL	2-L	2-NL	3-L	3-NL	4-L	4-NL	5-L	5-NL	6-L	6-NL	7-L	7-NL
8	10	5	3	10	10	10	1	10	10	10	2	10	9
2	4	1	2	5	3	0	1	4	7	4	7	4	6
4	2	2	4	8	5	2	6	5	10	4	4	10	8
5	10	1	9	7	3	9	10	10	1	8	0	10	10
1	4	2	1	2	1	1	2	10	5	10	4	10	8
2	1	0	2	7	5	0	6	10	3	10	7	10	5
3	1	0	3	6	6	1	0	4	1	5	3	8	9
2	0	1	1	5	6	2	0	6	6	6	9	7	10
5	1	1	0	8	10	1	5	7	10	8	3	10	10
7	1	2	1	8	5	8	1	8	9	9	10	10	10
1	5	0	3	4	5	1	5	5	10	6	5	6	10
7	1	3	2	7	4	5	0	10	5	5	4	10	7
4	3	1	3	2	6	2	4	6	8	4	8	9	8
7	10	1	1	6	4	1	1	6	2	8	2	9	3
6	2	3	1	5	10	7	1	1	10	3	10	2	10
3	1	4	3	5	8	1	1	3	10	4	4	6	10
5		2		7		0		6		8		10	
4		2		5		4		2		4		6	

Question	Mean	Median	Std Dev	t-Stat
1-L	4.2	4	2.2	0.73
1-NL	3.5	2	3.5	
2-L	1.7	1.5	1.4	-1.21
2-NL	2.4	2	2.1	
3-L	5.9	6	2.1	-0.32
3-NL	5.7	5	2.7	
4-L	3.1	1.5	3.3	0.28
4-NL	2.8	1	2.9	
5-L	6.3	6	2.9	0.37
5-NL	6.7	7.5	3.5	
6-L	6.4	6	2.4	-1.41
6-NL	5.1	4	3.3	
7-L	8.2	9.5	2.5	0.18
7-NL	8.3	9	2.1	

Note: "1-L" = question 1, laugh track group; "1-NL" = question 1, no laugh track group, etc.

A few interesting observations can be made, though, on several questions. Both the mean and median on question 1, which tested the general funniness of the scene, were higher for the laugh track group than for the no-laugh-track group. The *t*-statistic shows a significance at approximately the 25% significance level (see Table 2), which, though not experimentally important, does indicate that the laugh track had some effect on the majority of the children in the group. There are similar findings in question 4, which tested how much the scene made the child laugh. Again, the mean and median are slightly higher for the laugh track group, but the *t*-statistic only shows a significance of approximately 40%. Understandably, this is not particularly significant, but it does indicate a possibility that the laugh track is an influence.

On some of the questions, the laugh track seemed to have the opposite effect from hypotheses 1, 2, and 3. For example, on question 2, which asked how much the men liked each other, the no-laugh-track group had higher ratings, on both mean and median. In fact, with the *t*-statistic at -1.2, this is an approximately 10% significance level (see Table 2). This shows that in a large majority of the cases, the children who watch the no-laugh-track scene will rate the men as liking each other more than the laugh-track viewers would. This interesting trend will be discussed in the next chapter. The same opposite results appear on question 6 also, with the mean and median being higher for the laugh-track group. Question 6 asked the children how much it hurt the men when they hit each other, and the laugh-track viewers rated the pain higher, again opposite of what was proposed. The *t*-statistic for this question was -1.4, which, like question 2, is approximately at the 10% significance level. Some possible reasons for this will be explored in the next chapter.

It is also interesting to compare the results from questions 6 and 7, since the questions asked for similar answers. Question 6 asked how much it hurt the

Table 2

Mean Scores, *t*-statistic, and Significance between Questions

Question	Mean: Laugh track	Mean: No-laugh track	*t*-stat	Approximate Significance
1: How funny was it?	4.22	3.50	0.73	.25
2: How much did they like each other?	1.72	2.44	-1.21	.10
3: How mad were they?	5.94	5.69	-0.32	.40
4: How much did you laugh?	3.06	2.75	0.29	.40
5: How hard did they hit?	6.28	6.69	0.38	.35
6: How much did it hurt them?	6.44	5.13	-1.41	.10
7: How much would it hurt you?	8.17	8.31	0.18	.45

men when they were hit, and question 7 asked how much it would hurt you (the child) if someone hit you like that. As just mentioned, the laugh-track viewers rated the pain of the men higher than the no-laugh-track viewers in question 6, yet they did not rate the personal pain higher in question 7. Though it is at a very low significance level, the no-laugh-track group did consider the potential personal pain would be slightly greater, as predicted. In addition, the children from both groups rated the men's pain much lower than the pain they would feel if they were hit that hard (see Table 2). This raises interesting questions about why the children would apply different criteria to the characters than they would for themselves, and why the laugh track seemed to increase the characters' pain ratings compared to a no-laugh-track version of the same scene.

In summary, after performing a *t*-test on the scores from each question, it is clear that there is no significant difference at either a .01 or .05 level. This indicates that, from an experimental research perspective, the treatment (the laugh track) did not have a significant effect on the group. However, at lower significance levels (.10 - .30), there does appear to be some influence from the laugh track—in some cases supporting hypotheses 1, 2, and 3, and in some cases completely contradicting them. In the next chapter, some possible reasons for this will be analyzed, and some further research ideas will be proposed.

DISCUSSION

After reviewing the literature, designing and carrying out the experiment, and analyzing the data, several questions have come up that deserve attention in this final chapter. For example, in hindsight, were there any problems with the experimental process itself? If so, how could that have affected the data? From the data analysis, a few results need explanations. What new questions have emerged from the research? What old questions remain unanwered? What are some suggestions for future researchers?

In the following pages, these questions will be discussed. The information can best be divided into three sections: explanations for the data results, analysis of the experimental process, and suggestions for further research.

Explanations for the Data Results

To quickly recap the data results, at high (.01 and .05) significance levels, the treatment, the laugh track, did not have any effect on the children's humor or violence and pain ratings of the scene. However, at lower significance levels, there did appear to be some influence from the laugh track. But, on some questions, this influence was directly opposite of the predictions. How can these results be explained?

The explanations fall into three basic groups of theories: laughter and laugh track research, visual vs. audio television processing, and reality/fantasy effects. As mentioned in the literature review, there are several areas of research that need to be considered with this topic. In fact, there are so many different variables and considerations at work, it may be too difficult to accurately isolate the effects of the laugh track. Some examples of this will follow.

To begin, how could the general finding that there was no significant laugh-track effect be explained? One obvious reason could be that the children have had too much previous laugh track exposure. This idea is supported by some of the research presented earlier. For example, Neuendorf and Fennell—who found that canned laughter increased mirth behavior, but not funniness ratings—claimed that a TV generation is developing for whom the laugh track is a normal occurence (44). They suggested that the laugh track is so common now, it creates a communal experience for the viewers—that they will laugh along with the unseen reference group, but that it is just because of social pressure, not because they really think the material is funny.

This appeared to be the case in this study also. Every time a child laughed audibly—smiles were not counted—a mark was put on his or her answer form. This was done mainly out of general interest. Interestingly, only the children who watched the laugh track scene laughed out loud. In addition, in the laugh-track group, about one third of the children laughed at least once. None of the no-laugh-track group laughed out loud. This was not an official part of the research, and should not be used as scientific data, but it does agree with all of the laughter studies that show greater mirth response when some outside laughter is present (Neuendorf and Fennell; Smythe and Fuller; Nosanchuk and Lightstone; Chapman, 1975; Young and Frye).

Like Neuendorf and Fennell, several other researchers (Chapman, 1973; Donaghue, McCarrey, and Clement; Leventhal and Mace), have also found that laugh tracks and other forms of added laughter did not affect the subjects' ratings of humor on television shows, slides, and audio tapes. This explains the very small difference between the groups on questions 1 and 4 (funniness and laughability). From these findings, it is possible to conclude that laugh tracks also do not affect violence and pain ratings.

Another reason for the lack of significant differences between the groups is that the children may not be as attentive to the audio portion of television as they are to the visual portion. Although several researchers claim that children process television using both modes (Pezdek and Hartman; Krull and Husson; Bryant and Anderson), the findings of this study suggest that they place a higher emphasis on the visual modes. There are some studies that support this. Alwitt and associates, for example, found that in young children, the visual attributes were what kept the children's attention on a television show. In addition, Hayes and Birnbaum found that young children process the visual information better than the aural information, and their definition of "aural information" contained canned laughter. Remember, on the "mixed up" cartoon, with the wrong sound track, only one child noticed something was wrong!

Another reason, which will be discussed more thoroughly later, is that there may have been problems with the type of interview scale that was used. The children may have had difficulty quantifying their feelings on a "10-marble scale." Children's cognitive development was not a subject that was researched for this study; however, several of the experiments cited in chapter 2 used similar methods with small children, and none expressed any concerns about asking 6- to 8-year-olds to answer questions on a 5- or 10-point Likert scale. So, though this is one possible explanation for the lack of rating differences between the two groups, it is probably not the primary reason. Clearly, though, future researchers in this area should examine this method carefully to be sure that it is an appropriate method of collecting data from young children.

To briefly summarize, the lack of significant difference between the laugh-track and no-laugh-track groups can be explained by (a) the children's previous over-exposure to canned laughter, (b) a possible lack of cognitive ability to quantify their feelings, (c) a possible lack of attention to the audio portion of the

scene, and (c) a well-supported theory that added laughter does not necessarily increase humor ratings. However, there were also some interesting results from some of the questions that indicate that the laugh track may have had a slight influence on the perceptions of the scene. How can these be explained?

First, there was an opposite effect from the proposed hypotheses on questions 2 and 6. As discussed in the previous chapter, the *t*-statistic for these two questions shows a significance of about .10, which is relatively high. However, the children from the no-laugh-track group rated the men as liking each other more, and the laugh-track group rated the pain from the fight higher. Why? One reason is that the children may be conditioned from previous television viewing—especially cartoons—where laugh tracks have indicated more violence than programs with a more true-to-life setting. So, when they hear the canned laughter, they simply assume that the show will be more violent. Or, perhaps the laugh track indicated that they hit each other so hard, or disliked each other so much, that this was what was so funny. This is supported in part by Fuller's laugh track theory: the canned laughter acts as a cue which directs the viewer to search for a humorous interpretation, "even if the stimulus itself is not intentionally funny" (396).

A second interesting result was the comparison of the answers from questions 6 and 7. In question 6, the children rated how much it hurt the men, and in question 7, they rated how much it would hurt them. The children from both groups rated the characters' pain lower than their own potential pain. One possible explanation for this is that the children did not see the scene as reality—in other words, that's just TV, but if it happened to me... But, because younger children often have a hard time distinguishing between television and reality, especially at 6-years-old and younger (Gunter and McAleer), this should be the opposite of what was found. To support this, though, Haynes found that

children perceived a comic cartoon as much more violent than a realistic cartoon. He suggested that realistic programs usually contain violence that is only incidental to the major theme of the story, and that the children may become involved with the plot and lose some awareness of the violence, or perhaps the "bad guys" deserved the violence. The laugh track in this study may have indicated to the children that this is a comic scene; hence, the higher violence ratings.

Several researchers have shown that the closer to everyday life the television violence is portrayed, or the more familiar the surroundings, the more serious it is judged to be. Thus, another possible explanation for the differences between questions 6 and 7 is that the children felt very detached from the characters, and could not relate to the gold-rush mining-camp setting. Therefore, they may have rated the characters' pain as less serious than if it happened to them, which they could relate to easily. A final possibility is that the children simply took into consideration that the characters were just actors, and that the fighting was fake, and therefore it did not hurt them very much.

Analysis of the Experimental Process

To begin, it would be good to point out that overall, the marble method for obtaining scores worked very well. All of the children caught on very quickly, and were not confused about what to do. This method was originally chosen to avoid any reading skills problems with the younger children, primarily the 6-year-olds. The children seemed proud and important to be helping with an experiment, and were very cooperative and attentive. They watched the scene closely, answered the questions seriously, and were not flippant about how many marbles they put in the bowl.

A few problems areas were identified, though. First, among the less serious ones, some of the children appeared to be second-guessing the interviewers. They looked intently into our faces after each question, as if to judge what type of answer we wanted. The interviewers were instructed to look down at the script sheet, or shuffle papers, while the child was answering the question to avoid sending any nonverbal messages through eye contact or facial expressions. This was a probably not a malicious attempt to alter the data; rather, the children truly wanted to help in any way they could. As can be noted from the lead-in explanations and the order of the questions on the interview script (see Appendix C), the children did not know exactly what answers were desired, so it is doubtful that they were successful in guessing what was wanted.

Another problem area concerned the children's cognitive development levels. It is quite possible that some of the children were not cognitively developed enough to accurately quantify their answers with the correct number of marbles. The children may not have been able to decide how many marbles "funny" they thought the scene was, how many marbles "mad" the men were, etc. As mentioned before, in the pilot study, many children answered with primarily 0's or 10's. This seemed to improve once the extra explanation and example were added to the interview script. Older children, and adults, of course, may be used to rating their feelings on a 5- or 10-point scale, largely from years of schooling and testing. For example, one child laughed heartily at two spots in the scene, which, for a one-minute scene, is quite a bit. However, for the question, "Did this show make you laugh?" he thought for a few seconds, and then said, "Well, it made me laugh twice, so I'll put in two." His answer to that question was two marbles, because it made him laugh twice.

Another child, for the question, "Did it hurt them when they hit each other?" explained that he'd been to a TV station, so he knew that the actors didn't

really hit each other; therefore, it didn't hurt them at all (0 marbles). He was asked to pretend it was real for the question. Did other children reason their answers like this? If so, this may have affected the results.

A final area of concern involved the specific scene used. It was difficult to find a scene that satisfied the basic criteria of being violent, but also mildly funny. One child had seen the movie—"Oh, cool! I've seen this! This is a funny movie!"—and began singing one of the songs. Her scores were taken out. The scene may have been too funny without the laugh track, because of the characters' facial expressions and voice inflection. Therefore, there may not have been as big a difference in the seriousness-funniness between the two scenes, resulting in the closer ratings between the groups.

Suggestions for Further Research

There are several areas that warrant further research. For example, does a laugh track affect the perception of a violent scene? This experiment found no strong influence from the laugh track, but, since studies in this area are so sparse, more research is definitely needed. This study was essentially a ground-breaker—no other study has addressed children, laugh tracks, and violence perception. Therefore, more children should be used in general, and the study should be replicated, to see if these findings are accurate.

Would there be an additional group effect if some of the children watched the scenes in groups? Chapman's 1975 study found that young children who shared humor through group laughter rated taped jokes as funnier than those who listened to them alone. Is there an age difference for laugh track effects? Perhaps 3- and 4-year-olds could be compared to 6- and 7-year-olds, or 9- and 10-year-olds. The 3- and 4-year-olds may have had less television exposure, and may not be used to a laugh track. Older children, like 9- to 10-year-olds, may

have more experience quantifying answers on a Likert-type scale, so the results may be more accurate.

Finally, there are a few different method types that could be tried. Using two different scenes, with two versions each, one with a laugh track and one without, would eliminate the Likert scale problems. In this case, the children would view a laugh-track scene and a no-laugh-track scene, and would simply answer by rating one over the other. For example: Which scene was funnier? Which scene hurt the people more? Which scene had the people that were the maddest? An obvious disadvantage to this, though, is the number of children needed. It may be necessary to produce the scenes for this method, though, to be sure they are equally violent and painful.

Another variation of this research would be to select a longer scene—perhaps 10 to 15 minutes—to help develop more indentification for the younger children. The answers to question 6 and 7, how much it hurt them vs. how much it would hurt you, may draw closer to each other with this option.

Concluding Remarks

The effects of television on children has been a busy subject in the last 20 years, and has resulted in thousands of different types of studies. This study focused on children's perceptions of television, fantasy vs. reality factors, and laughter/laugh track factors. The research, though in many areas sparse and undecided, indicated that there may be an effect on humor, violence, and pain ratings if a laugh track is present on a television scene. When the research was performed, however, there was no significant difference found. Interestingly, though, at lower significance levels, there did seem to be some effect from the laugh track. The results can be explained in some cases, and in others, there are

still some unanswered questions. Much more study and research is needed in this area, and several ideas for further research have been proposed.

NOTES

1 Chris Carey, "Clay Miller Assaulted Outside Fraternity," *Oregon State University Daily Barometer* 17 May 1984: 1.

2 Richard Zoglin, "Is TV Ruining Our Children?" *Time Magazine* 15 October 1990: 75.

3 For an excellent summary, see Wartella, 115-251.

4 John Morreall, *Taking Laughter Seriously* (New York: State University Press, 1983): 54.

5 For an excellent summary, see McGhee and Goldstein, 143-172.

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APPENDICES

APPENDIX A

OFFICE OF VICE PRESIDENT FOR RESEARCH, GRADUATE STUDIES, AND INTERNATIONAL PROGRAMS

OREGON STATE UNIVERSITY
Administrative Services A312 Corvallis, Oregon · 97331-2140
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November 21, 1991

Principal Investigator:

The following project has been approved for exemption under the guidelines of Oregon State University's Committee for the Protection of Human Subjects and the U.S. Department of Health and Human Services:

Principal Investigator: Michael Beachley

Student's Name (if any): Bonny Hinz

Department: Speech Communication

Source of Funding:

Project Title: The Effects of a Laugh Track on Children's Perceptions of Television Violence

Comments:

A copy of this information will be provided to the Chair of the Committee for the Protection of Human Subjects. If questions arise, you may be contacted further.

Redacted for Privacy

Mary E. Perkins
Research Development Officer

cc: CPHS Chair

APPENDIX B

To the parents of 1st and 2nd grade children:

We are conducting a research experiment to study whether the presence of a laugh track (canned laughter) affects how a child perceives a television scene. Specifically, we will be testing whether children rate a scene as more "violent" and "painful" when there is no laugh track. To do this, we have chosen a 60-second scene from the musical/western "Paint Your Wagon." In the scene, Ben and Pardner argue over who is going to leave, and who will stay with the woman. Ben gets mad, and punches Pardner. Pardner punches Ben back. Ben then hits Pardner over the head with a large pan, knocking him out. The scene is "violent," but contains no profanity or bloodshed. We have two versions of this scene--one with a laugh track (laughter at the "violent" parts), and one without.

We will be using approximately 60 children. The children will watch either the laugh-track version or the no-laugh-track version of the scene.

Once the children have watched the scene, they will be interviewed one by one. They will be asked approximately 10 simple questions about the scene, and will put marbles in a bowl to represent their answer. For example, "How funny was this show? If you thought it was really funny, put a lot of marbles in the bowl. If you didn't think it was funny at all, don't put any marbles in the bowl." Or, "How much did that hurt? If you thought it hurt a lot, put a lot of marbles in the bowl," etc.

The entire process should take no longer than 20 minutes. If you have *any* questions or concerns, please feel free to contact:

Dr. Michael Beachley	Bonny Hinz
Speech Department, OSU	Speech Department, OSU
(W) 737-2055	(W) 737-5395 or (H) 752-4066

Your child's participation in this experiment is purely voluntary. Your child is free to discontinue participation at any time, without any sort of negative repercussions.

We will be at the school during the month of February, so please return one copy of this form as soon as possible. You can return it to your After School Club site, or to the main club office (747 NW 19th). You may keep one copy for your files. Thank you for your time!

==========

I have read the above information, and authorize my child to participate in this research.

_____ _____

Parent or Guardian Signature Date

Child's name: _____

Grade level: _____

APPENDIX C

Scene from "Paint Your Wagon" (musical western)
(Approximate time length: 60 seconds)

(Placement of laugh track indicated for laugh track version.)

(Pardner is packing his bags; Ben walks up)

BEN: Unpack Pardner, you ain't goin' nowhere. That woman loves you. (LAUGH TRACK) (pause) And that puts a new wheel on the wagon, don't it? (LAUGH TRACK)

PARDNER: Now you get this straight, Ben. I'm not gonna take away your wife, and that's final.

BEN: But you love her. (LAUGH TRACK)

PARDNER: So do you. And there's only one way for anybody to be happy, and that's for one of us to move away and forget it. And I'm goin'. (pause) Now get out of my way.

(Ben punches Pardner) (LAUGH TRACK)

BEN: (shouting) Pardner, there comes a time in the life of every partnership when the party of the first part has no recourse except to knock some sense into the party of the second part. You're staying!

(Pardner punches Ben) (LAUGH TRACK)

(Ben hits Pardner with pan; knocks Pardner out) (LAUGH TRACK)

(Ben then carries Pardner into house)

APPENDIX D

INTRODUCTION:

Hello. My name is Bonny, and I'm a student at Oregon State University. I'm doing an experiment about television and what children think about the shows. You will be helping me with this experiment.

What you will do is watch a very short part of a television show, about one minute long. Right after you see it, we will ask you some easy questions about what you thought of the show. It's not a test, it's just what you thought about it.

After you answer the questions, you'll be done. It should only take a few minutes.

BEFORE SHOWING CLIP:

OK, like I said before, I'm going to show you a very short part of a TV show. Pay close attention to it, and try to remember how you felt when you were watching it. Are you ready? Watch carefully!

(Show clip)

OK, now go over to _____, and he/she will ask you some very easy questions about what you thought about the show.

INTERVIEWER:

Hi! My name is _____. First, I want to remind you that this is not a test. We just want to know how you felt about it. There are no right or wrong answers, so don't worry about how you answer the questions.

You will answer the questions by putting marbles from this bowl into this bowl. I will then count the number of marbles you put in the bowl, and that is what I'll write down as your answer. OK?

Only put as many marbles in the bowl as you feel. For example, if I asked you how much you liked the show, and you just sort of liked it, you might only want to put 4 or 5 or 6 marbles in the bowl. So, don't think you always need to put all 10 or none in the bowl. OK?

Remember, there are no right or wrong answers.

1. Did you think this show was funny? If you thought it was really funny, put a lot of the marbles into this bowl. If you didn't think it was very funny, don't put very many or any marbles in the bowl.

2. How much did the men like each other? If you thought they liked each other a lot, put a lot of the marbles in the bowl. If you didn't think they liked each other that much, don't put very many or any marbles in the bowl.

3. Did you think the men were mad at each other? If you thought they were really mad at each other, put a lot of marbles in the bowl. If you didn't think they were very mad at each other, don't put very many or any marbles in the bowl.

4. Did this show make you laugh? If it made you laugh a lot, put a lot of the marbles in the bowl. If it didn't make you laugh very much, don't put very many, or any, marbles in the bowl.

5. How hard did the men hit each other? If you thought they hit each other really hard, put a lot of the marbles in the bowl. If you didn't think they hit each other very hard, don't put very many or any marbles in the bowl.

6. Did it hurt them when they hit each other? If you thought it hurt them a lot, put a lot of the marbles in the bowl. If you didn't think it hurt them very much, don't put very many or any marbles in the bowl.

7. If someone hit *you* that hard, how much would it hurt? If you think it would hurt a lot, put a lot of marbles in the bowl. If you don't think it would hurt very much, don't put very many or any marbles in the bowl.

8. What is your first name?
9. How old are you?
10. When is your birthday?
11. Sex: M F

OK. That was all of the questions. You can go back to the other room now. Don't tell the other kids who haven't seen this yet what you did. That's because everyone may feel different about the show, and you don't want to tell them what you thought because it might change their minds. OK? After everyone is done, you can talk about it as much as you want. But for right now, don't say anything about it. OK?

Thank you!!